UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
BIN C15700
Seattle, WA 98115-0070

Refer to:
OSB2001-0119-FEC

May 30, 2002

Mr. Bob Graham
Natural Resource Conservation Service
101 SW Main Street
Suite 1300
Portland, Oregon 97204

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Lacomb Irrigation District Bank Stabilization Project along the Crabtree Creek, near Lacomb, Linn County, Oregon.

Dear Mr. Graham:

Enclosed is the biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of the proposed Lacomb Irrigation District Bank Stabilization Project along the Crabtree Creek, near Lacomb, Linn County, Oregon. In this Opinion, NMFS concludes that the proposed action is not likely to jeopardize the continued existence of ESA-listed Upper Willamette River (UWR) chinook salmon *(Oncorhynchus tshawytscha)* and Upper Willamette River (UWR) steelhead *(O. mykiss)* or their designated critical habitats. As required by section 7 of the ESA, NMFS has included reasonable and prudent measures with nondiscretionary terms and conditions that NMFS believes are necessary to minimize the potential for incidental take associated with these actions.

The Opinion contains an analysis of the effects of the proposed action on designated critical habitat. Shortly before the issuance of this Opinion, however, a Federal court vacated the rule designating critical habitat for the evolutionarily significant units considered in this Opinion. The analysis and conclusions regarding critical habitat remain informative for our application of the jeopardy standard even though they no longer have independent legal significance. Also, if critical habitat is redesignated before this action is fully implemented, the analysis will be relevant when determining whether a reinitiation of consultation will be necessary at that time. For these reasons and the need for timely issuance this Opinion, our critical habitat analysis has not been removed from this Opinion.

This Opinion also serves as consultation on essential fish habitat pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and its implementing regulations (50 CFR part 600).

If you have any questions regarding this consultation, please contact Jim Turner of my staff in the Oregon Habitat Branch at 503-231-6894.

Sincerely,

for Michael R Crouse

D. Robert Lohn
Regional Administrator

cc: Dan Gresham - COE
Willa Nehlsen - USFWS
Tom Melville - DEQ
Yvonne Vallette - EPA
Rian Windsheimer - Senator Smith

Endangered Species Act - Section 7 Consultation
&
Magnuson-Stevens Act Essential Fish Habitat Consultation

BIOLOGICAL OPINION

Lacomb Irrigation District Bank Stabilization,
Crabtree Creek, Lacomb, Linn County, Oregon

Agency:	Natural Resource Conservation Service
Consultation Conducted By:	National Marine Fisheries Service, Northwest Region
Date Issued:	May 30, 2002
Issued by:	for Michael R Course D. Robert Lohn Regional Administrator
Refer to:	**OHB2002-0119-FEC**

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1. ENDANGERED SPECIES ACT

1.1 Background

On June 5, 2001, the National Marine Fisheries Service (NMFS) received a request from the Natural Resource Conservation Service (NRCS) for Endangered Species Act (ESA) section 7 consultation on the Lacomb Irrigation District Bank Stabilization Project along Crabtree Creek, near Lacomb, Linn County, Oregon. In the June 4, 2001, letter, the NRCS determined that Upper Willamette River (UWR) chinook salmon (*Oncorhynchus tshawytscha*) and UWR steelhead (*O. mykiss*) may occur within the project area and that these species may be affected by the proposed project. Because the proposed action would result in short-term increases in turbidity and fine sediments, as well as alteration of riparian areas and streambank habitat, thereby reducing potential utility to listed ESA-listed species, NRCS determined that the proposed action may adversely affect these species or their designated critical habitats and requested formal consultation.

The proposed project is located at river mile 20 of Crabtree Creek, a tributary to the South Santiam River. The proposed project is associated with the operation of an existing power-generating facility. An independent and separate action to construct a concrete wall along the streambank upstream of the powerhouse was completed in the summer of 2000 (OSB2000-0133). The NRCS is funding this proposed action under the Emergency Watershed Protection (EWP), which is subject to section 7 consultation under the Endangered Species Act. The Lacomb Irrigation District is the project proponent. The NRCS has worked with the Lacomb Irrigation District and contributed to the project design and environmental review under the ESA and Magnuson-Stevens Act.

Consultation was initiated on June 5th 2001. NMFS reviewed the request for consultation and the supporting information, including a biological assessment (BA), a description of alternatives considered by NRCS, and a description of general best management practices that would be put into practice during construction. The information provided in the BA was evaluated by NMFS and determined to be insufficient to complete consultation. NMFS notified the NRCS on July 10, 2001, that additional information would be necessary. NMFS clarified the type of information that would be necessary to complete the request for consultation in a memo, dated August 6, 2001, and a letter dated August 15, 2001. NMFS met with the NRCS in the field on August 15, 2001, to discuss the proposal and NMFS' information needs. NRCS provided additional details in an August 25, 2001, letter. This information contributed to a better understanding of the project, yet still contained some deficiencies. NMFS notified the NRCS in September, 2001, of these deficiencies and sent a second letter, dated December 10, 2001, specifying the information needed. NRCS then requested a meeting with NMFS, which took place on March 18, 2002. During that meeting NRCS indicated that they could not provide any additional information. NMFS and NRCS agree that the consultation would be completed based on the available information.

The objective of this Opinion is to determine whether the proposed action to stabilize the bankline is likely to jeopardize the continued existence of UWR chinook salmon and UWR steelhead, or destroy or adversely affect designated critical habitats.

1.2 Proposed Action

The Natural Resource Conservation Service (NRCS) proposes to fund the Lacomb Irrigation District Bank Stabilization Project, Crabtree Creek, near Lacomb, Linn County, Oregon. The proposed action consists of anchoring large-diameter rock into the bedrock at the project site using concrete and steel structures. This would require excavation of the streambank, drilling into the bedrock, constructing the steel structure, placing approximately 1500 cubic yards of rock, and constructing a gravel road along the bank. The action will affect approximately 300 feet of bank, riparian area and floodplain, and extend 50 feet back from the stream. The proposed action is intended to stop bank erosion, and allow for the construction of an access road along the top of the bank to an existing power house.

The NRCS has indicated that the primary purpose of the proposed action is to reestablish access to the power house. Access to the power facilities in the past had been provided by a gravel road along the top of the streambank within the floodplain of Crabtree Creek. This old road had been protected from erosion by large rocks, three-to-four foot in diameter. An unusually large flood event occurred in February 1999, eroding the rock and streambank, and washing out the road. Currently, temporary access to the power house is provided by an existing private road.

Access to the power house is needed to periodically service the power facilities. Power is generated during the winter months from water diverted upstream from the Lacomb Irrigation District's canal. The power facilities operate under a FERC exemption for facilities that generate less than 500kw/hrs. Heavy truck use may be needed when extensive repairs on the facility are required, however, this type of access is reported to be infrequent and variable, averaging twice a year, and some years not at all.

The action area for this proposed project extends beyond the immediate project site. The action area is defined by NMFS regulations (50 CFR 402) as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." For this proposed project, the action area includes the immediate project site, and two miles upstream and downstream from the site, thereby taking into consideration the potential for downstream erosion increase due to this action, and that spawning and rearing upstream could be affected by modification of habitat at the project site.

The NRCS' proposed conservation measures include the implementation of erosion control measures during construction, maintenance of fish passage and habitat access, and working during the Oregon Department of Fish and Wildlife in-water work period.

1.3 Biological Information

The proposed project is within the range of UWR chinook salmon and UWR steelhead. References on biology, listing status, and protective regulations for these species are found in Table 1.

The Santiam River Basin provides a major contribution to natural production in the Willamette River. UWR chinook salmon and UWR steelhead have been substantially affected by past actions, limiting distribution and population viability. The abundance of UWR spring chinook salmon declined substantially from the 1950's to the present, and the short term trend indicates a continued decline. Crabtree Creek supports subpopulations of UWR spring chinook and UWR steelhead. These subpopulations are made up of low numbers of fish, and are highly variable, howerver, fish surveys have indicated a substantial increase in number of adult and juvenile fish during the 2001 season. Lower precipitation in 2001 resulted in few, if any, flooding events, and may have allowed for greater egg-to-fry survival. The subpopulations of Crabtree Creek contribute to fish production in the Santiam River basin. Historically, the Santiam River basin produced a significant amount of UWR chinook salmon and steelhead, and this production was split evenly between the North and South Santiam Rivers, with Crabtree Cree and other smaller tributaries providing a small, but substantial contribution as a whole. These small tributary streams of the South Santiam system are considered to have produced one-third of the historic production of steelhead.

Table 1. References for Additional Background on Listing Status, Biological Information, and Critical Habitat Elements for the Listed and Proposed Species Addressed in this Opinion.

Species	Listing Status	Protective Regulations	Biological Information, Historical Population Trends
UWR steelhead	March 25, 1999 64 FR 14517, Threatened	July 10, 2000; 65 FR 42422	Busby *et al.* 1995; 1996
UWR chinook salmon	March 24, 1999; 64 FR 14308, Threatened	July 10, 2000; 65 FR 42422	Myers *et al.*1998; Healey 1991

1.4 Evaluating Proposed Action

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA as defined by 50 CFR 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of defining the biological requirements of the listed species, and evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: Collective effects of the proposed or continuing action, the environmental baseline, and any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmon's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

Also, NMFS must determine whether habitat modifications appreciably diminish the value of habitat for both survival and recovery of the listed species. NMFS identifies those effects of the action that impair the function of any essential habitat feature. NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery.

For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action, as well as the extent to which the proposed action impairs the function of essential elements necessary for migration, spawning, and rearing of the ESA-listed and proposed species under the existing environmental baseline.

1.4.1 Biological Requirements

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess to the current status of the listed species, NMFS starts with the determinations made in its decision to list the species for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for the subject species to survive and recover to a naturally-reproducing population level at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance its capacity to adapt to various environmental conditions, and allow it to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful rearing and migration. The current status of the indicated fish species, based upon their risk of extinction, has not significantly improved since the species were listed.

1.4.2 Environmental Baseline Conditions

The baseline conditions reflect past and ongoing activities that have affected UWR chinook salmon and UWR steelhead. The proposed action area, as defined above, is less than the

complete range of the listed species. Current conditions within the action area include minimal complex, instream habitat structure; degraded water quality, including increased temperature, turbidity, and suspended sediment; modified hydrology resulting in shifting of distribution, amplitude, and duration of floods; a channelized stream bed; hardened streambanks; minimal large woody debris; limited floodplains; and loss of riparian forests and wetlands. As described in the BA and supporting information, current conditions are not providing the properly functioning conditions (PFC) that supported salmonids in the past, and that would be expected to naturally occur.

Crabtree Creek is located in the South Santiam River basin. The watershed can be characterized as a highly variable terrain, from steep and mountainous to flat, broad valley plains. Crabtree Creek is a moderately sized stream, originating in the west slopes of the Cascades. The stream is subject to periodic, intense flood events as a result of high rain on snow events and landslides with associated debris flows.

Baseline conditions in Crabtree Creek have been affected by urbanization, flood control, agricultural and forest practices. This has resulted in the current environmental baseline. Multi-aged and diverse riparian forests have been restricted or eliminated. Large wood has been removed or not replenished due to lack of upstream sources. Increased flooding intensity and landslide frequency are linked to the upstream forest activities. The streambanks have been hardened and channelized, resulting in greater down-cutting of the stream channel to bedrock, with extensive lateral migration and erosion of streambanks. Water quality has been affected through high summer water temperatures, suspended fine sediments, substantial diversions of stream flows, and higher peak discharges during the winter with reduced discharges during the summer. Crabtree Creek is listed on the DEQ 303(d) list for water quality. Over-allocation of water rights has resulted in a high likelihood of a complete dewatering of the system in the immediate vicinity of the proposed action during summer months.

UWR chinook salmon and UWR steelhead spawn and rear in Crabtree Creek. Some deep pools provide holding space for spring chinook salmon waiting to move upstream to spawn. Limited channel complexes and large wood jams provide overwintering feeding and refuge for chinook salmon and steelhead. Irregular streambanks and interstitial spaces provide for juvenile chinook salmon and steelhead rearing.

Gravel deposits at the proposed project site and in the project vicinity provide opportunity for spawning for chinook and steelhead. Recent surveys have not indicated active spawning, yet there is substantial use of the area by juvenile chinook salmon and steelhead. Water quality and water quantity have limited the current use by listed fish during the summer months. Riparian vegetation is minimal, consisting primarily of ground cover.

Current site conditions do not provide properly functioning conditions for all relevant habitat indicators. For example, streambank hardening, stream channelization, channel degradation and exposed bed rock, minimal riparian trees, limited floodplain connectivity, and the lack of channel roughness such as large wood and jams translates to a greater level of stream instability,

high flushing of spawning gravels, exposed bed rock, decreased shade and higher potential stream temperatures.

Based on the best available information regarding the current status of UWR chinook salmon and UWR steelhead range-wide; the population status, trends, and genetics; and the poor environmental baseline conditions within the action area; NMFS concludes that the biological requirements of UWR chinook salmon and UWR steelhead within the action area are not currently being met. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of UWR chinook salmon and UWR steelhead.

1.5 Analysis of Effects

1.5.1 Effects of Proposed Actions

Construction activities associated with streambank protection and road installation may facilitate the transport of sediment into the stream channel and increase turbidity by precipitation run-off and/or by high stream flows. Sediment has the potential to degrade salmonid spawning and incubation habitat, and fine, redeposited sediment has the potential to adversely affect primary and secondary productivity (Spence *et al.* 1996), and to reduce cover for juvenile salmonids (Bjornn and Reiser 1991).

The effects of suspended sediment and turbidity on fish are reported in the literature as ranging from beneficial to detrimental (see below). Elevated total suspended solids (TSS) conditions have been reported to enhance cover conditions, reduce piscivorous fish/bird predation rates, and improve survival. Elevated TSS conditions have also been reported to cause physiological stress, reduce growth, and adversely affect survival. Of key importance in considering the detrimental effects of TSS on fish are the season, frequency, and the duration of exposure (not just the TSS concentration).

Behavioral avoidance of turbid waters may be one of the most important effects of suspended sediments (DeVore *et al.* 1980, Birtwell *et al.* 1984, Scannell 1988). Salmonids have been observed moving laterally and downstream in order to avoid turbid plumes (McLeay *et al.* 1984, 1987, Sigler *et al.* 1984, Lloyd 1987, Scannell 1988, Servizi and Martens 1991). Juvenile salmonids tend to avoid streams that are chronically turbid, such as glacial streams or those disturbed by human activities, except when the fish need to traverse these streams along migration routes (Lloyd *et al.* 1987). However, a potentially positive reported effect of turbidity is that it provides refuge and cover from predation (Gregory and Levings 1988).

Fish that remain in turbid waters experience a reduction in predation from piscivorous fish and birds (Gregory and Levings 1998). In systems with intense predation pressure, this provides a beneficial trade-off (e.g., enhanced survival) to the cost of potential physical effects (e.g., reduced growth). Turbidity levels of about 23 Nephalometric Turbidity Units (NTU) have been found to minimize bird and fish predation risks (Gregory 1993). Exposure duration is a critical

determinant of the occurrence and magnitude of physical or behavioral effects (Newcombe and MacDonald 1991). Salmonids have evolved in systems that periodically experience short-term pulses (days to weeks) of high suspended sediment loads, often associated with flood events, and are adapted to such high pulse exposures. Adult and larger juvenile salmonids appear to be little affected by the high concentrations of suspended sediments that occur during storm and snowmelt runoff episodes (Bjorn and Reiser 1991). However, research indicates that chronic exposure can cause physiological stress responses which can increase maintenance energy, and reduce feeding and growth (Redding *et al.* 1987, Lloyd 1987, Servizi and Martens 1991).

At moderate levels, turbidity has the potential to adversely affect primary and secondary productivity, and at high levels, has the potential to injure and kill adult and juvenile fish. Turbidity might also interfere with feeding (Spence *et al.* 1996). Newly emerged salmonid fry may be vulnerable to even moderate amounts of turbidity (Bjornn and Reiser 1991). Other behavioral effects on fish, such as gill-flaring and feeding changes, have been observed in response to pulses of suspended sediment (Berg and Northcote 1985). Fine, redeposited sediments also have the potential to adversely affect primary and secondary productivity (Spence *et al.* 1996), and to reduce incubation success (Bell 1991) and cover for juvenile salmonids (Bjornn and Reiser 1991).

Larger juvenile and adult salmon appear to be little affected by ephemerally-high concentrations of suspended sediments that occur during most storms and episodes of snow melt. However, other research demonstrates that feeding and territorial behavior can be disrupted by short-term exposure to turbid water. Localized increases of turbidity during in-water work will likely displace fish in the project area and disrupt normal behavior. Therefore, there is a low probability of direct mortality from turbidity associated with proposed activities because the turbidity should be localized and brief, and because the work site will be isolated from the fish bearing waters during the construction period.

Placement of riprap will harden the streambank, and may modify the stream hydraulics, thereby affecting stream channel conditions. Hardening the streambank in this system, where the streambed is composed of a relatively thin bed of coarse sediment on top of bedrock, may result in the scouring and erosion of localized gravel deposits. Current and potential gravel deposits providing spawning and rearing habitat for ESA-listed fish would be eliminated. This could reduce the potential for future salmonid production.

Hardening the streambank may also limit the ability of the stream to adjust to flood energy, and limit dynamic channel-forming processes. Channelizing the stream increases the likelihood of fine sediments being eroded and suspended in the stream. Channelization limits the amount and complexity of instream habitat such as secondary and high flow channels, and the ability of the stream to rework gravels that provide for spawning and rearing. The current stream adjustment and the reworking of gravels at the project site will create conditions that benefit listed fish, and over time could be expected to provide an increased capacity to support listed fish.

Construction of the road along the top of the bank could limit the potential to establish trees in the riparian area. Impervious road surfaces may also increase pollutants and water quantity delivery to the stream. Impervious surfaces collect oils and grease, and deliver them to streams during rain events.

Some of the negative effects of these activities on UWR chinook salmon and UWR steelhead will be avoided or minimized by carrying out the construction methods and approaches included in the proposed project design and conservation measures. These include:

- Conducting work during the period of time in the summer when fish are less likely to be present at the project location or are less vulnerable to project impacts.
- Placement of root wads within the riprap to add structure and roughness to the streambank that will provide refugia for juvenile salmonids, aid in gravel retention and flow reduction.
- Planting a 5-foot-wide riparian buffer between the road and the top of the streambank.
- Using gravel for the road surface to facilitate infiltration of rain water and to trap any pollutants that may result from the minimal usage by vehicles to access the power house.
- Implementing erosion control actions during road constuction.

1.5.2 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." For the purposes of this analysis, the general action area is the applicant's property. For this proposed project, the action area includes the immediate project site, and two miles upstream and downstream from the site, thereby taking into consideration the potential for downstream erosion increase due to this action, and that spawning and rearing upstream could be affected by modification of habitat at the project site. Other activities within the watershed have the potential to impact fish and habitat within the action area. Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes.

NMFS is not aware of any significant change in non-federal activities that are reasonably certain to occur. NMFS assumes that future private and state actions will continue at similar intensities as in recent years.

1.6 Conclusion

After reviewing the current status of UWR chinook salmon and UWR steelhead, the environmental baseline for the action area, the effects of the proposed Lacomb Irrigation District

Bank Stabilization Project and its cumulative effects, it is NMFS' opinion that this project, as proposed, is not likely to jeopardize the continued existence of the UWR chinook salmon or UWR steelhead. This conclusion is based on NMFS' findings that the proposed action will minimize death or injury to UWR chinook salmon and UWR steelhead by: (1) Establishing a riparian setback; (2) maintaining channel processes; (3) implementing erosion control measures; (4) maintaining fish passage and habitat access; (5) revegetating disturbed and open ground; (6) restricting all activities around spawning beds; and (7) conducting work during ODFW in-water work period, when minimal populations of juvenile salmonids are expected to be present.

1.7 Reinitiation of Consultation

This concludes formal consultation on the Lacomb Irrigation District Bank Stabilization Project. As provided in 50 CFR 402.16, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: (1) The amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Opinion; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of authorized incidental take is exceeded, any operations causing such take must cease pending re-initiation of consultation.

2. INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1 Amount or Extent of the Take

The NMFS anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of UWR chinook and UWR steelhead due to the detrimental effects of increased sediment levels (non-lethal), and the potential for direct incidental take during in-water work (lethal and non-lethal). Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur resulting from the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species themselves. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the BA and the additional information, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Opinion. The extent of the take is limited to the project action area.

2.2 Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to avoid or minimize take of the above species.

1. Minimize take of listed salmonids through establishment of riparian setbacks and vegetative buffers to further reduce the impacts from the proposed activity.

2. Minimize the take of listed salmonids by implementing measures during construction to contain and limit the discharge of fine sediment to the adjacent stream, maintain fish passage and timing construction to occur during the least impacting time frame.

3. Minimize unavoidable impacts and adverse effects to listed salmonids by restoring or enhancing stream and riparian habitat.
4. Monitor project implementations and report the results to ensure measures provided in this Opinion are effective in minimizing the likelihood of take from the proposed activity.

2.3 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the NRCS must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement Reasonable and Prudent Measure #1 (establishment of riparian setbacks and vegetative buffers), the NRCS shall require that:
    a. The constructed road be set back a minimum of a 25 feet from the top of bank and riparian vegetative buffers of native trees and shrubs be established between the road and stream.

2. To implement Reasonable and Prudent Measure #2 (contain and limit the discharge of fine sediment to the adjacent stream, maintain fish passage and timing construction), The NRCS shall require that:

   a. Before significant[1] alteration of the project area, the following actions must be completed.

      i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.

      ii. Emergency erosion controls. Ensure that the following materials for emergency erosion control are onsite.

         1. A supply of sediment control materials (e.g., silt fence, straw bales[2]).

         2. An oil absorbing floating boom whenever surface water is present.

      iii. Temporary erosion controls. All temporary erosion controls must be in-place and appropriately installed downslope of project activity within the riparian area until site restoration is complete.

   b. Heavy Equipment. Use of heavy equipment will be restricted as follows.

      i. Choice of equipment. When heavy equipment must be used, the equipment selected must have the least adverse affects on the environment (e.g., minimally sized, rubber tired).

      ii. Vehicle staging. Vehicles must be fueled, operated, maintained and stored as follows.

         1. Vehicle staging, cleaning, maintenance, refueling, and fuel storage must take place in a vehicle staging area placed 150 feet or more from any stream, water body or wetland.

         2. All vehicles operated within 150 feet of any stream, water body or wetland must be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected must be repaired in the vehicle staging area before the vehicle resumes operation.

         3. All equipment operated instream must be cleaned before beginning operations below the bankfull elevation to remove all external oil, grease, dirt, and mud.

      iii. Stationary power equipment. Stationary power equipment (e.g., generators, cranes) operated within 150 feet of any stream, water body or wetland must be diapered to prevent leaks.

   c. Site preparation. Native materials will be conserved for site restoration.

      i. If possible, native materials must be left where they are found.

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[1] "Significant" means an effect can be meaningfully measured, detected or evaluated.

[2] When available, certified weed-free straw or hay bales must be used to prevent introduction of noxious weeds.

ii. Materials that are moved, damaged or destroyed must be replaced with a functional equivalent during site restoration.

iii. Any large wood, native vegetation, weed-free topsoil, and native channel material displaced by construction must be stockpiled for use during site restoration.

d. All disturbed and exposed ground shall be covered with erosion protection material to control surface erosion.

e. Silt fences and sediment barriers shall be placed though out the construction area down slope of all activities and within all drainage channels and swales to contain fine sediments within the construction area that may be transported off site through surface water discharges.

f. Surface water runoff from the all construction areas shall be filtered or otherwise treated to remove all silts prior to being discharged offsite.

g. All silt fences and sediment barriers shall be maintained to operated effectively throughout the project life, and all retained sediments shall be stabilized in some manner prior to completion of the project or removal of the silt fences and sediment barriers.

h. All in-water work shall be conducted during the Oregon Department of Fish and Wildlife preferred in-water work period.

i. Project operations will cease under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.

j. Fish passage is not impaired during construction.

k. Large wood and trees shall be integrated into rock riprap placed along the bank as appropriate.

3. To implement Reasonable and Prudent Measure #3 (restoring or enhancing stream and riparian habitat), the NRCS shall require that all disturbed or bare ground be planted with native vegetation.

4. To implement Reasonable and Prudent Measure #4 (monitoring and reporting), the NRCS shall require that:

a. Within 30 days of completion of the project, the NRCS will submit a monitoring report to NMFS describing the success in meeting these terms and conditions. This report will consist of the following information:

i. A narrative assessment of the project's effects on natural river function.

ii. Photographic documentation of environmental conditions at the project site before, during and after project completion. Photographs will include general project location views and close-ups showing details of the area pre- and post-construction.

3. MAGNUSON-STEVENS ACT

3.1 Background

The objective of the essential fish habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NMFS on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NMFS shall provide conservation recommendations for any Federal or State activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NMFS provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for federally-managed fisheries within the waters of Washington, Oregon, and California. The designated EFH for groundfish and coastal pelagic species encompasses all waters from the mean high water line, and upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon and California, seaward to the boundary of the U.S. exclusive economic zone (370.4 km)(PFMC 1998a, 1998b). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for several hundred years)(PFMC 1999). In estuarine and marine areas, designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border.

Detailed descriptions and identifications of EFH for the groundfish species are found in the *Final Environmental Assessment/Regulatory Impact Review for Amendment 11 to The Pacific Coast Groundfish Management Plan* (PFMC 1998a) and the *NMFS Essential Fish Habitat for West Coast Groundfish Appendix* (Casillas *et al.* 1998). Detailed descriptions and identifications of EFH for the coastal pelagic species are found in Amendment 8 to the *Coastal Pelagic Species Fishery Management Plan* (PFMC 1998b). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of the potential adverse effects to these species' EFH from the proposed action is based on this information.

3.4 Proposed Action

The proposed actions are detailed above in section 1.2. of this Opinion. This area has been designated as EFH for various life stages of chinook salmon.

3.5 Effects of Proposed Action

As described in detail in section 1.5, the proposed activities may result in detrimental short- and long-term adverse effects to certain habitat parameters, including sedimentation/turbidity, localized gravel scour, and floodplain constriction.

3.6 Conclusion

NMFS believes that the proposed action may adversely affect the EFH for chinook salmon.

3.7 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NMFS is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the NRCS, all of the Reasonable and Prudent Measures and the Terms and Conditions contained in Sections 2.2 and 2.3 are applicable to EFH. Therefore, NMFS incorporates each of those measures here as EFH recommendations.

3.8 Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NMFS after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NMFS, the agency must explain its reasons for not following the recommendation.

3.9 Supplemental Consultation

The NRCS must reinitiate EFH consultation with NMFS if either action is substantially revised or new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR 600.920).

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